

15162/01320



6-AU 2834
H-5/1-25-01
Response
C.Wills

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re

U.S. Application of: Hiroyuki OKADA

For: ACTUATOR AND DRIVING APPARATUS
THEREOF

U.S. Serial No.: 09/456,184

Filed: December 07, 1999

Group Art Unit: 2834

Examiner: Thomas M. Dougherty

TECHNOLOGY CENTER 2800

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Assistant Director
For Patents
Washington, D.C. 20231

Dear Sir:

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James W. Williams
Name of Applicant, Assignee, or Registered
Representative

Signature

January 19, 2001

Date of Signature

RESPONSE

This is in response to the Office Action,
dated December 21, 2000, which set a response period of
one-month ending January 21, 2001.

The Office Action sets forth a requirement
under 35 U.S.C. 121 for a restriction between the
following inventions, which are defined as two groups
of claims:

I. Claims 1-11 and 17-26, drawn to a driving circuit or a method for a piezoelectric actuator, allegedly classified in class 310, subclass 317; and

II. Claims 12-16, drawn to a discharging circuit for a piezoelectric circuit, allegedly classified in class 310, subclass 316.03.

The requirement for restriction is respectfully traversed. The classification set forth in the Office Action for claims 12-16, i.e., class 310, subclass 316.03, is in error. That subclass is entitled:

ELECTRICAL GENERATOR OR MOTOR STRUCTURE

NON-DYNAMOELECTRIC

- . Piezoelectric elements and devices
- . . Electrical systems
- . . . Input circuit for simultaneous electrical and mechanical output from piezoelectric element
- Charging and Discharging.

Thus, subclass 316.03 requires that the piezoelectric element have "simultaneous electrical and mechanical output."

In contrast, each of claims 1-26 is directed to apparatus or method wherein a first voltage is applied to a piezoelectric device to charge the piezoelectric device and then a second voltage is applied to the piezoelectric device to discharge the piezoelectric device, thereby causing a mechanical output of the piezoelectric device which can be

utilized to drive an actuator. The input to the piezoelectric device is electrical and the output of the piezoelectric device is mechanical. Thus, with regard to the two subclasses proposed in the Office Action, each of claims 1-26 would appear to be classified in class 310, subclass 317, entitled:

ELECTRICAL GENERATOR OR MOTOR STRUCTURE

NON-DYNAMOELECTRIC

- . Piezoelectric elements and devices
- . . Electrical systems
- . . . Input circuit for mechanical output from piezoelectric element.

The basis for the allegation in the Office Action that the inventions of Group I and of Group II are related as subcombinations disclosed as useable together in a single combination is not understood. The apparatus claims in each set of claims include a driving apparatus suitable for driving a piezoelectric device which drives an actuator. It is not readily apparent how the Office Action contemplates combining a first driving apparatus, for driving a single piezoelectric device, and a second driving apparatus, for driving a single piezoelectric device, in order to drive a single piezoelectric device.

With regard to the alleged separate utilities, it is readily apparent that the actuator which can be driven by the driving apparatus of claim 1 can be a motor component or a valve discharge circuit just as readily as the actuator which can be driven by

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the driving apparatus of claim 12. Where then is the basis for the alleged different utilities.

As the requirement is based on an improper classification, a lack of any basis for the allegation of "subcombinations disclosed as useable together in a single combination", and a lack of any demonstration of separate utilities, (which are the only grounds asserted in support of the requirement), the requirement is improper and should be withdrawn.

Applicant provisionally elects Group I.
Claims 1-11 and 17-26 read on the elected invention.

Respectfully submitted,

By:



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